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(54) Container having pockets

(57) A stackable container (1) having pockets (2) for small e.g. electronic components comprises a base (4), side walls (3) and end walls (5). The pockets are formed by a continuous sheet (14) of flexible material suspended between suspension members (8). Accommodated in grooves (6). Alternate pockets may be shallower than their adjacent pockets to maximise the capacity of the container. A locking member (31) may be positioned in the grooves (6) to hold the pockets (2) in a closed condition.

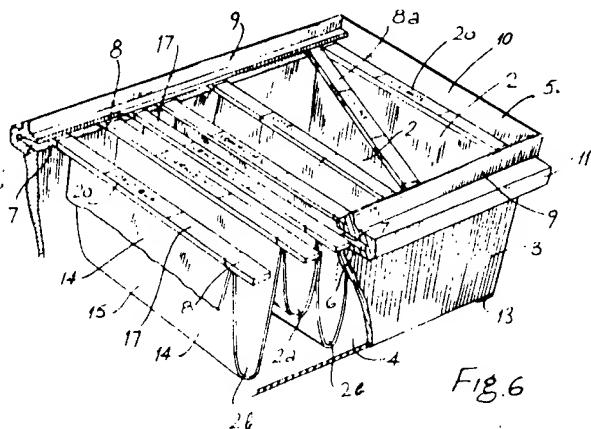


Fig.6

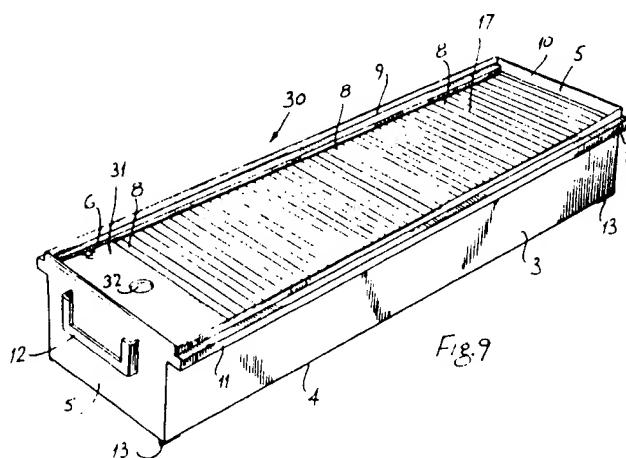
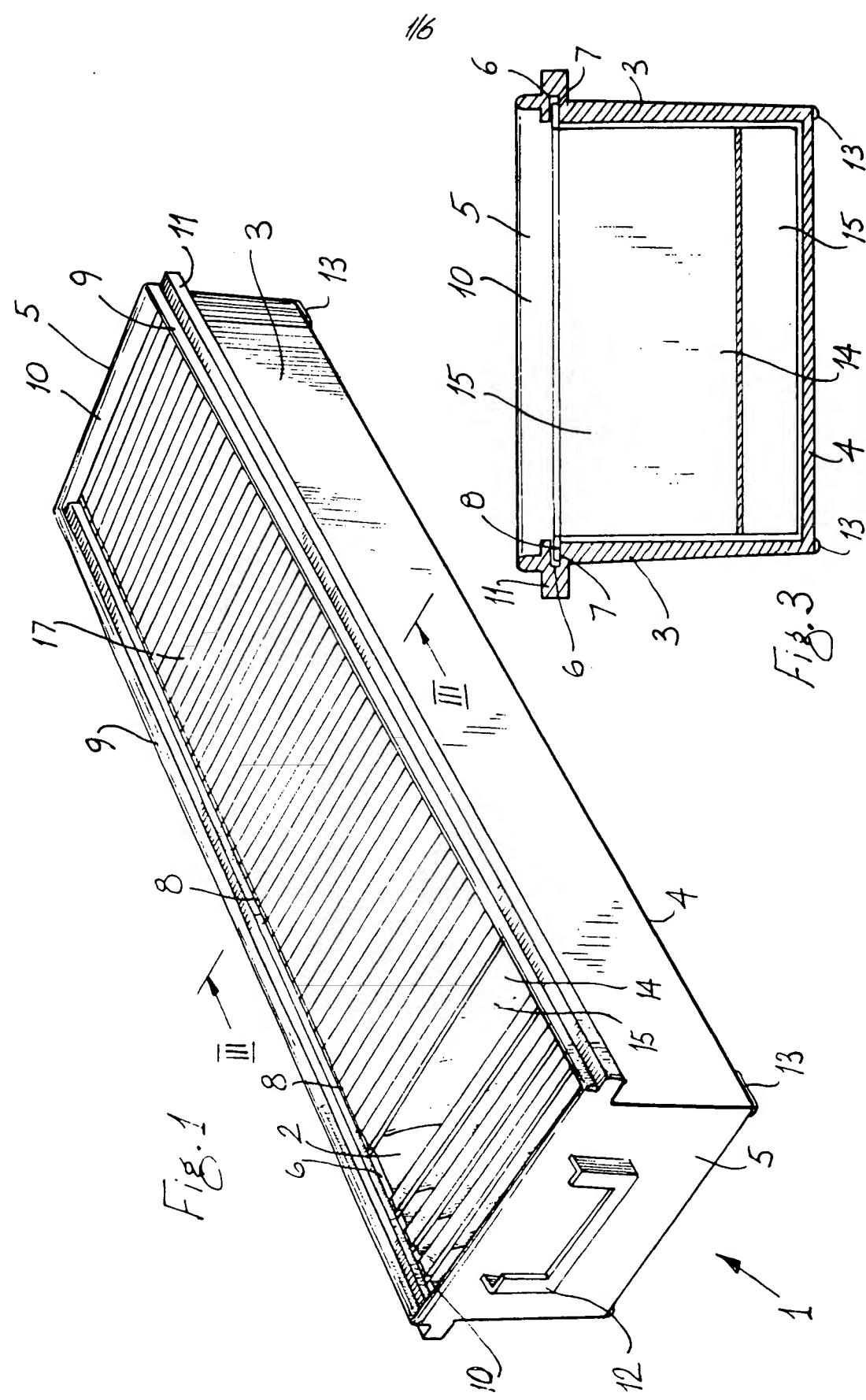


Fig.9

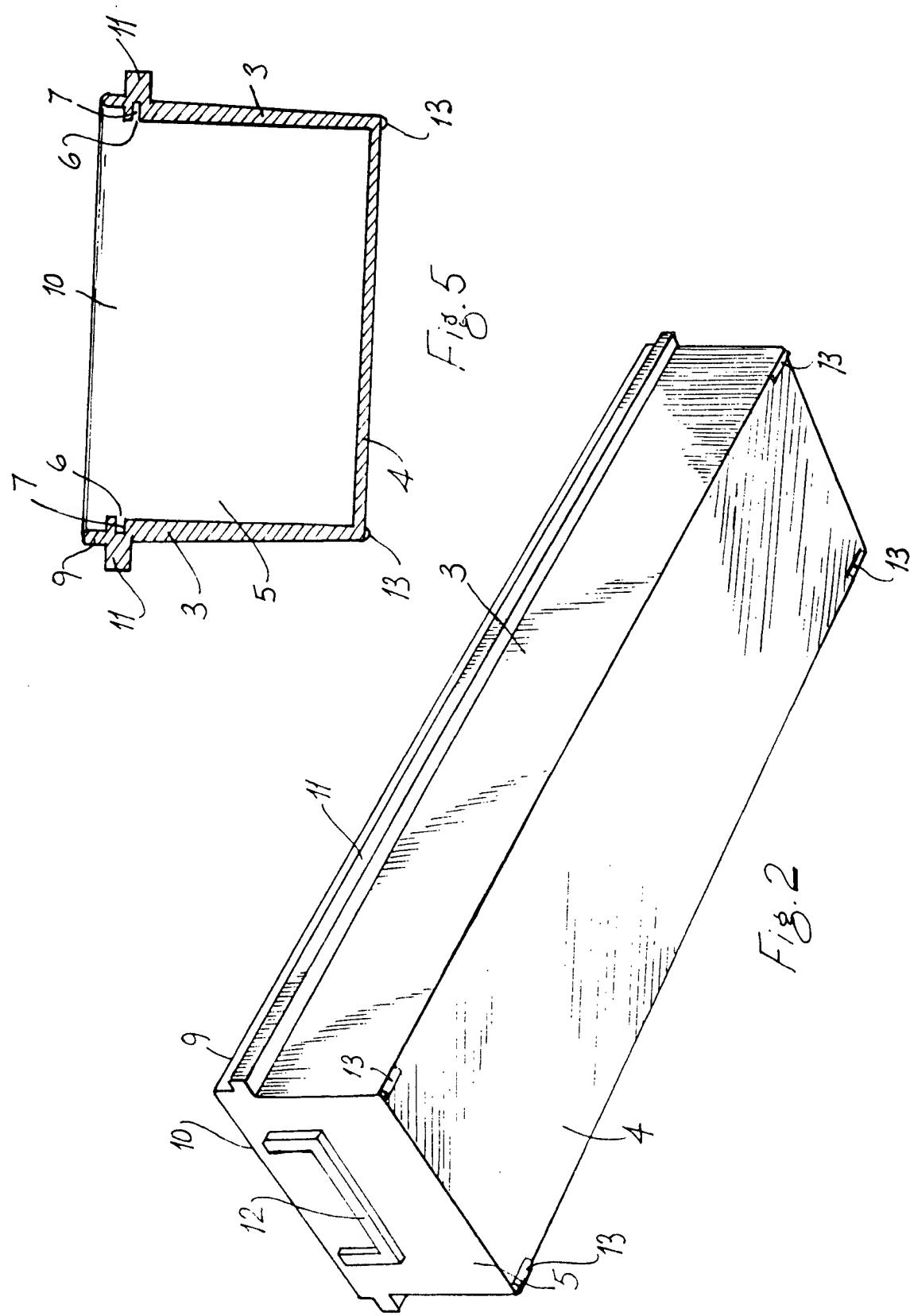
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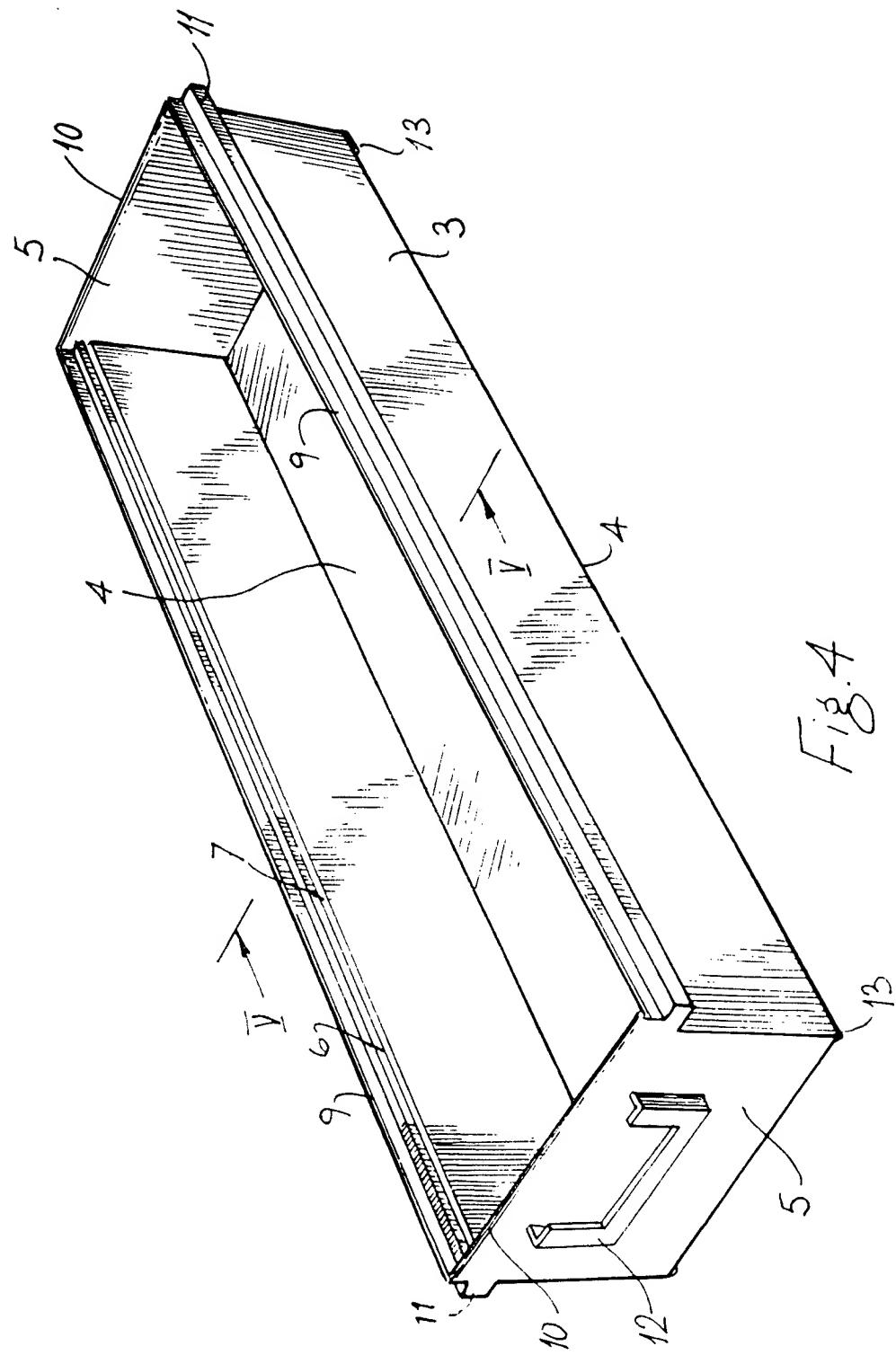
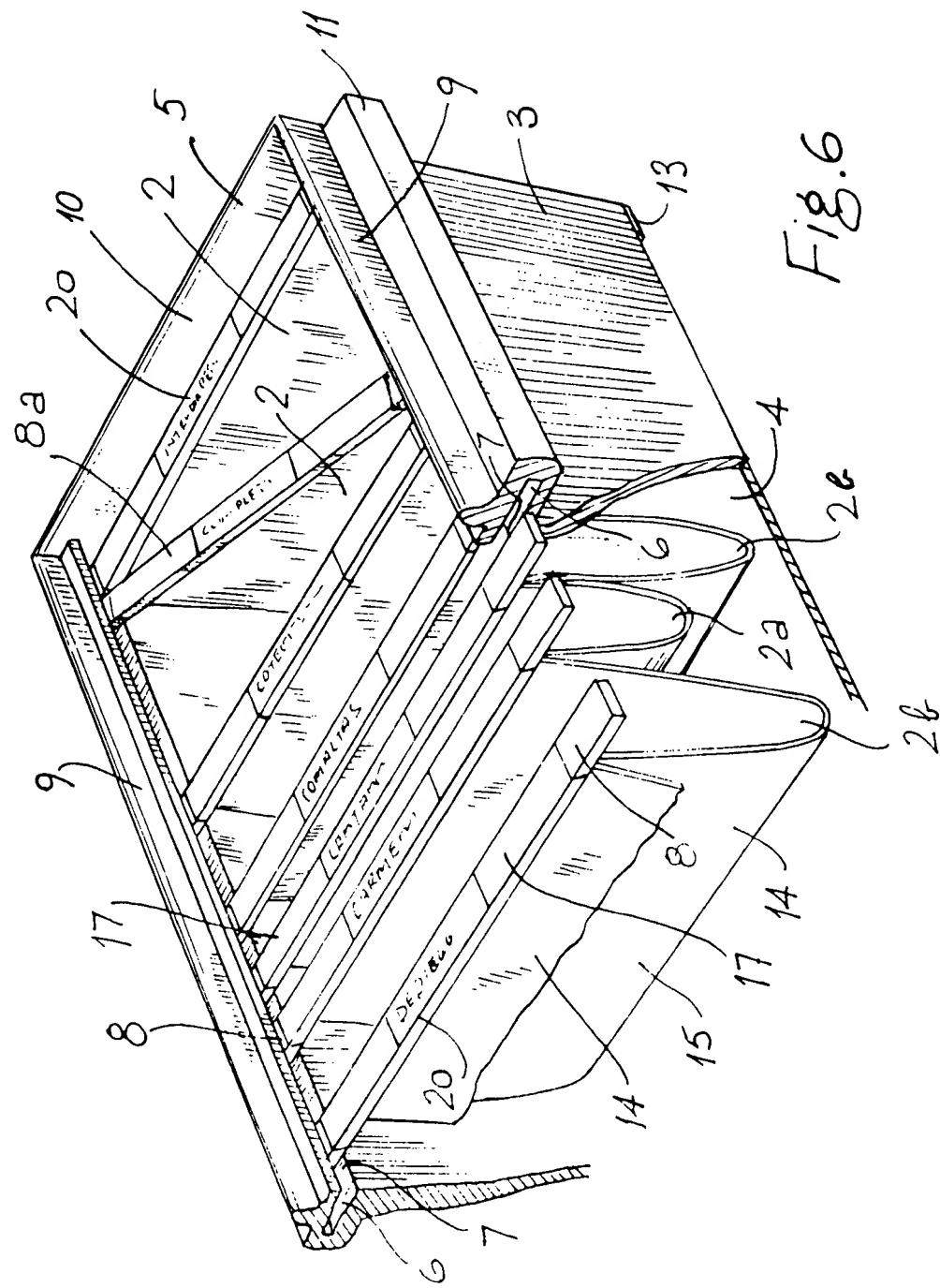


Fig. 4

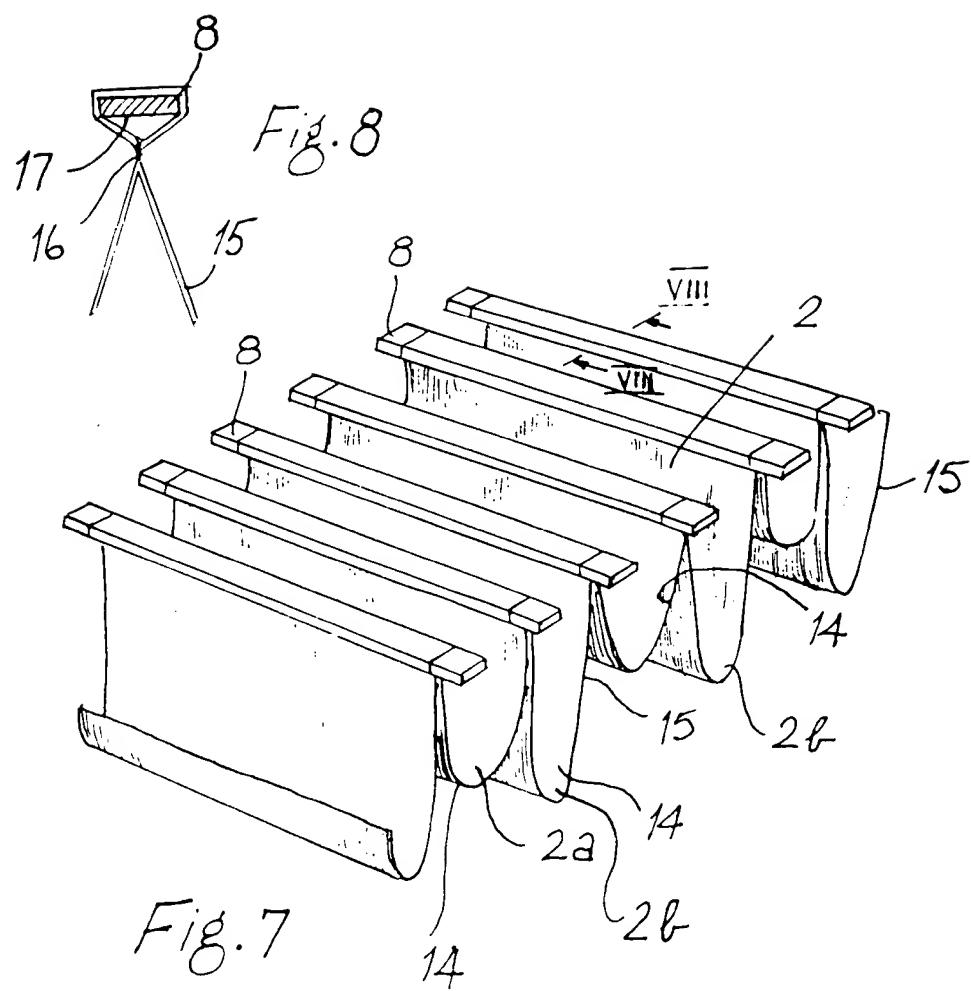
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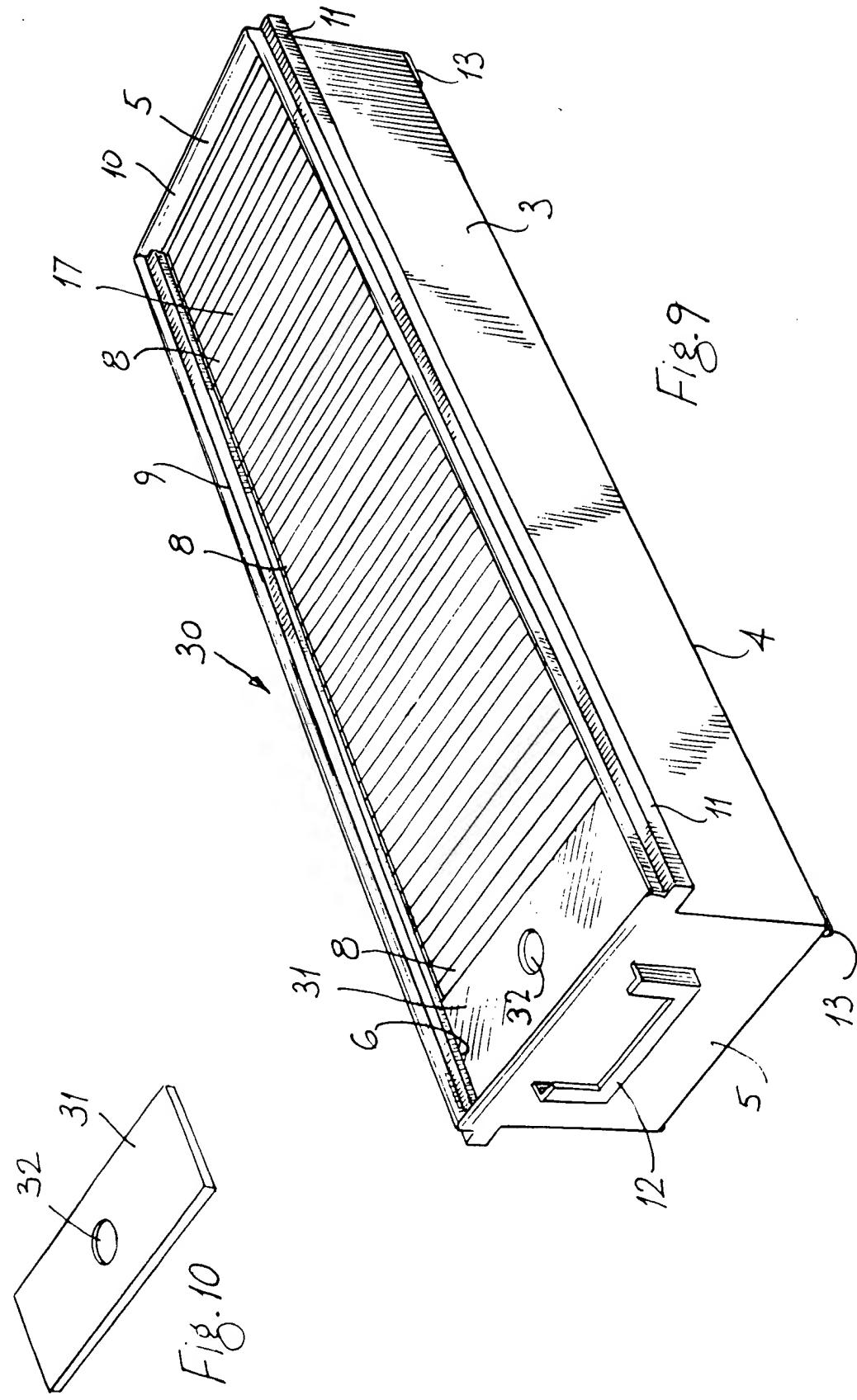
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SPECIFICATION

Container

- 5 The present invention relates to a container, and in particular, to a container having a plurality of discreet compartments for storing relatively small components.
- In general, electronic components, and the like, are stored in small boxes which may or may not be slideable as drawers in pigeon holes formed in a larger container. The problem with such boxes is that in general, they tend to be rather large for the components to be stored. And if one wants to keep a wide range of electronic components, perhaps storing only a relatively small number of each component, for example, three or four, if the different types of components are to be kept separate, a large number of boxes are required. Because of the size of these boxes, there is a considerable amount of volume wasted in each box.

There is therefore a need for a container for storing electronic components, or indeed any relatively small components. Further, there is a need for storing larger components, and indeed, in many cases, files and other papers and documents.

30 The invention is directed towards providing a container for storing such items.

According to the invention, there is provided a container comprising a pair of spaced-apart side members, each forming a track for supporting a plurality of suspension members extending between the side members, and a plurality of pockets suspended from the suspension members, each pocket being formed by suspending a sheet of material between a pair of adjacent suspension members.

Preferably, at least some of the pockets are of shallower depth than the other pockets.

Advantageously, alternate pockets are of shallower depth than their adjacent pockets.

45 In one embodiment of the invention, the shallowest pocket is no more than seven eighths of the depth of the deepest pocket, and it may be three quarters the depth of the deepest pocket, in a further case it may be no more than half the depth of the deepest pocket, and in a still further case the shallowest pocket may be no more than a quarter of the depth of the deepest pocket. Preferably, the deepest pocket extends to the bottom of the container.

In one embodiment of the invention the material forming the pocket is a flexible material.

60 In another embodiment of the invention a plurality of pockets are formed from a single sheet of flexible material, the material being passed over the suspension members.

65 Preferably, adjacent sides of adjacent pockets are sealed to each other adjacent the suspension members, to form a conduit to

slidably accommodate the suspension member.

70 Advantageously, the flexible sheet forming the pockets extends between the side members of the container.

The invention will be more clearly understood from the following description of a preferred embodiment thereof, given by way of example only, with reference to the accompanying drawings, in which:

Figure 1 is a perspective view of a container according to the invention;

Figure 2 is an underneath view of the container of Fig. 1;

80 Figure 3 is a cross-sectional view of the container of Fig. 1 on the line III-III of Fig. 1;

Figure 4 is a top perspective view of the container of Fig. 1 with portion of the container removed;

85 Figure 5 is a cross-sectional view of the container of Fig. 1 on the line V-V of Fig. 4;

Figure 6 is a perspective view of portion of the container of Fig. 1;

Figure 7 is a perspective view of another 90 portion of the container of Fig. 1;

Figure 8 is a cross-sectional view of portion of the container on the line VIII-VIII of Fig. 7;

Figure 9 is a perspective view of a container according to another embodiment of the invention; and

Figure 10 is a perspective view of portion of the container of Fig. 9.

Referring to the drawings, and initially to Figs. 1 to 8 thereof, there is provided a

100 container according to the invention, indicated generally by the reference numeral 1. In this case, the container 1 has a plurality of pockets 2 which are particularly suitable for storing relatively small components, for example,

105 electronic components and the like. The container 1 is injection moulded of plastics material, and comprises a pair of side walls 3 extending from a base 4 and joined by end walls 5. Grooves 6 in the side walls 3 form a

110 track 7 to engage and support suspension members 8 for the pockets 2, as will be described below. Portions 9 and 10 extend upwardly from the side and end walls 3 and 5 respectively, to form a rim which extends

115 around the top of the container. As can be seen in the drawings, the side and end walls taper slightly downwardly, so that the base 4 of one box can engage within the rim 9 and 10 of a box below it for stacking purposes.

120 Runners 11 extend sidewardly from each side wall 3 to engage corresponding rails (not shown), should it be desired to use the container as a drawer. A receiver 12 is provided on one end wall 5 to accommodate an identification tag (not shown). Feet 13 are provided on the base 4 for stability.

125 The suspension members 8 are of flat rectangular section and of a semi-rigid plastics material. The pockets 2 are formed by suspending a sheet 14 of flexible plastics ma-

terial between adjacent suspension members 8, whereby the sheet of material 14 forms sides 15 of the pockets 2. In this case, a plurality of pockets 2 are formed by a single sheet 14 of clear plastics material, as can clearly be seen in Figs. 6 and 7. Adjacent sides 15 of adjacent pockets 2 are longitudinally sealed together at 16 adjacent each suspension member to form a conduit 17 to slidably accommodate the suspension members 8. As can be seen in Figs. 6 and 7, alternate pockets are of a shallower depth than their adjacent pockets. For example, the pockets 2a are shallower than the pockets 2b. In this case, the shallower pockets 2a are approximately three quarters of the depth of their adjacent deeper pockets 2b. This has the considerable advantage that in the case where each pocket only stores a few components which would normally lie at the bottom of the pocket, components lying in the shallower pockets 2a are retained above the components in the deeper pockets 2b, thereby effectively increasing the capacity of the container by approximately a factor of two. It will readily be appreciated that if all the pockets were of substantially the same depth, then the components in adjacent pockets would interfere with each other, and effectively the capacity of the container would be reduced by half.

Identification labels 20 may also be inserted in the conduit 17 formed from the sheet of material above the suspension members 8, for identifying the components in each pocket 2. If desired, the identification labels 20 may be stuck to the support members 8.

In use, with the pockets 2, including the suspension members 8 removed from the container, the identification labels 20 are inserted in the conduits 17. The pockets are then assembled into the container by inserting the suspension members consecutively into the grooves 6. This is achieved by angling the suspension members 8 diagonally, as illustrated in Fig. 1. The suspension member 8a of Fig. 6 is illustrated being inserted. When all the support members 7 have been inserted in the grooves 6, the pockets 2 are then ready for use, and the components may be placed in the appropriate pockets.

When it is desired to stack the containers 1 one above the other, the base 4 of one container is stacked within the rim 9 and 10 of the container immediately below it, thus the base 4 of the container acts as a lid for the container below it.

Referring now to Figs. 9 and 10, a container 30 according to another embodiment of the invention, is provided. This container is substantially similar to that just described and similar components are identified by the same reference numerals. The main difference between this container and the container 1 is that a locking means is provided to lock the

suspension members tightly together, thereby closing the pockets to retain the components in the pockets in the event that the container is upended. The locking means is provided by a spacer member 31 of a semi-rigid plastics material, and is of similar thickness as the suspension members 8. The spacer member 31 is engageable in the grooves 6, and may be inserted between any pair of suspension members 8, or as is illustrated in Fig. 9, may be inserted between the last suspension member 8 and the end wall 5. A finger hole 32 through the spacer member 31 is provided to enable the spacer member to be inserted and removed from the grooves 6.

In use, when it is desired to lock the suspension members tightly together, they are pushed together as illustrated in Fig. 9, and the spacer member 31 is then inserted in the grooves 6. On removal of the spacer member 31, the suspension members may then be moved apart to extract components from the pockets.

It will be appreciated that while a spacer member of a particular size has been illustrated, the spacer member may be of any suitable size depending on the number and width of the suspension members in the container.

It will also be appreciated that locking means of other shapes could be used, for example, in certain cases it is envisaged that the spacer member may be a U-shaped member in which the two free legs of the U would be engageable with the grooves to lock the suspension members tightly together.

It will be appreciated that while the container has been described for use with electronic components, it could be used for storing any small articles or components. Indeed, it will be appreciated that a larger version of the container could be used for storing documents, papers, or indeed, files. Further, it will be appreciated that while the container has been described without a lid, it will be readily appreciated by those skilled in the art that a lid could be provided on it. It is envisaged that the lid would normally sit within the rim at the top. Further, it will be appreciated that in certain cases, the container could be used as a drawer with the runners slideable on corresponding rails.

It will also be appreciated that while the container has been described as being of injection moulded plastics material, it could be of any suitable material, whether injection moulded or fabricated. Further, it will be appreciated that while the container has been described as having a rim to accommodate stacking, this is not necessary.

Additionally, it will be appreciated that while the track for supporting the suspension members has been described as a groove, any other suitable form of track could be used, such tracks will be readily apparent to those

skilled in the art.

Needless to say, suspension members of materials other than plastics material could be used, and it is not necessary for the suspension members to be semi-rigid.

- Further, it will be appreciated that while the material forming the pockets has been described as being of one continuous strip of material, this is not necessary. Each individual pocket may be formed by a single sheet of material. Further, it will be appreciated that the suspension members may be secured to the material forming the pockets without the need to form a conduit. The support members could, for example, be stuck to the outer surface of the dividers.

It will of course be appreciated that while the container has been described as having a pair of side walls and end walls extending upwardly from a base, in its simplest, the container need only comprise a pair of side members which would form the tracks to support the suspension members. For example, the side members could be supported on a framework. Additionally, it will be appreciated that the runners and identification tag receiver could be dispensed with if desired, without departing from the scope of the invention.

- Furthermore, it will be appreciated that while the container has been described as having alternate pockets shallower than their adjacent pockets, it is not necessary that each alternate pocket should be shallower. For example, in certain cases it is envisaged that only a few of the pockets may be shallower, while in other cases, it is envisaged that pockets of many different depths could be provided, for example, in certain cases it is envisaged that pockets of say, for example, four different depths could be provided, each adjacent pocket being deeper than its next adjacent pocket, until the deepest pocket was reached, and then the next pocket would be the shortest pocket, and so on. Further, it will be appreciated that while the shallow pockets have been described as being approximately three quarters of the depth of the deeper pockets, the shallower pockets could be of any depth, for example, in certain cases it is envisaged that the shallowest pocket may be only a quarter of the depth, or indeed less than the depth of the deepest pocket. Additionally, it is envisaged in certain cases that the deepest pocket may not extend down to the base of the container. It will of course be appreciated that if desired in certain cases, all the pockets could be of similar depth.

It is also envisaged that the container could be used in conjunction with anti-static bags, for example, anti-static bags of plastics material. One problem in handling electronic components is that static electricity may cause components to be unstable. Thus, if the components are stored in the pockets in anti-static

bags, it is envisaged that the problems caused by static could be eliminated. Additionally, in certain cases it is envisaged that the plastics material forming the pockets could be of any anti-static material, as indeed, could be the material of the container.

It is also envisaged in certain cases that a finger hole may be provided at either end of the container, and preferably, in the front end wall for handling the box. For example, if the box were effectively acting as a drawer being supported on rails by the runners 11, the container could be withdrawn on the rails by the finger hole.

- It is also envisaged that in certain cases while the containers already described have been described as having feet, these are not necessary and may be dispensed with if desired.

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CLAIMS

1. A container comprising a pair of spaced-apart side members, each forming a track for supporting a plurality of suspension

- 90 members extending between the side members, and a plurality of pockets suspended from the suspension members, each pocket being formed by suspending a sheet of material between a pair of adjacent suspension members.

2. A container as claimed in claim 1, in which at least some of the pockets are of shallower depth than the other pockets.

3. A container as claimed in claim 2, in which alternate pockets are of shallower depth than their adjacent pockets.

4. Apparatus as claimed in claim 2 or 3, in which the shallowest pocket is no more than seven eighths of the depth of the deepest pocket.

5. A container as claimed in claim 4, in which the shallowest pocket is not more than three quarters the depth of the deepest pocket.

- 110 6. A container as claimed in claim 5, in which the shallowest pocket is not more than half the depth of the deepest pocket.

7. A container as claimed in claim 6, in which the shallowest pocket is not more than 115 a quarter of the depth of the deepest pocket.

8. A container as claimed in any preceding claim, in which the deepest pocket extends to the bottom of the container.

9. A container as claimed in any preceding claim in which the material forming the pocket is a flexible material.

10. A container as claimed in any preceding claim, in which a plurality of pockets are formed from a single sheet of flexible material, the material being passed over the suspension members.

11. A container as claimed in claim 10, in which adjacent sides of adjacent pockets are sealed to each other adjacent the suspension members, to form a conduit to slidably ac-

commodate the suspension member.

12. A container as claimed in any preceding claim, in which the flexible sheet forming the pockets extends between the side members of the container.

13. A container as claimed in any preceding claim, in which each suspension member is of semi-rigid material.

14. A container as claimed in any preceding claim, in which each suspension member is of rectangular cross section, adjacent suspension members abutting each other by their narrower sides.

15. A container as claimed in any preceding claim, in which the track is formed by an elongated groove formed in each side member.

16. A container as claimed in any preceding claim, in which the side members are formed by a pair of end walls extending upwardly from a base, and joined at each end by a pair of end walls.

17. A container as claimed in claim 16, in which portion of the end and side walls extend upwardly to form a rim around the top of the container.

18. A container as claimed in claim 17, in which the side and end walls taper downwardly for stacking, so that the base of the container engages within the rim.

19. A container as claimed in any preceding claim, in which a locking means is provided to lock the suspension members so that they abut each other tightly to retain the contents in the pockets.

20. A container as claimed in claim 19, in which the locking means is a spacer member insertable in the tracks, the spacer member abutting against a pair of spacer members or between a spacer member and the end of the track.

21. A container as claimed in claim 20, in which the spacer member is provided by a substantially rectangular sheet of semi-rigid material, the thickness of which being similar to that of the suspension members.

22. A container as claimed in any of claims 19 to 21, in which grip means are provided to withdraw the locking means from the container.

23. A container as claimed in claim 22, in which the grip means is provided by a finger hole in the locking means.

24. A container as claimed in any of claims 16 to 23, in which a receiving means is provided on an end wall of the container to receive an identity strip.

25. A container as claimed in any of claims 11 to 24, in which an identification label is provided in each conduit on top of the suspension member for identification purposes.

26. A container as claimed in any preceding claim, in which a pair of runners extend sidewardly from the side members for engage-

ment with corresponding rails, so that the container may be used as a drawer.

27. Containers substantially as described herein, with reference to and as illustrated in the accompanying drawings.

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